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EXAMINER

MOHADDES, LADAN

ART UNIT

PAPER NUMBER

1726

NOTIFICATION DATE

DELIVERY MODE

07/14/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## DETAILED ACTION

### ***Response to Arguments***

1. Applicant's arguments filed 06/24/2011 have been fully considered but they are not persuasive.
2. The Applicant has argued that the formulas disclosed in claim 1 are not merely a method of measuring properties of the polymer but actually relate to the amount of unfreezable water/state of existence of the water in the electrolyte. The Examiner respectfully disagrees and once again points out to paragraph [0019] of the Specification below:

*[0019] The ratio of the amount of unfreezable water, represented by formula (S1) and the content of unfreezable water, represented by formula (S2), are found in accordance with a differential scanning calorimetry analysis (DSC) method. That is to say, a polymer electrolyte is immersed in water at 20 °C for 12 hours, and after that, taken out from the water, and excessive water that clings to the surface is removed by drying the surface with gauze as quickly as possible, and then, the polymer electrolyte is placed in a sealable type sample container made of aluminum with an alumina coating, of which the weight (Gp) has been measured in advance, which is then clamped shut, and after that, the total weight (Gw) of the sample and the sealable type sample container are measured as quickly as possible, and DSC measurement is immediately carried out. In accordance with the temperature measuring program, the polymer electrolyte is cooled from room temperature to -30 °C at a rate of 10 °C /minute, and after that, the temperature is increased to 5 °C at a rate of 0.3 °C/minute, and the*

Art Unit: 1726

amount of bulk water  $W_f$  is found from the DSC curve of this temperature raising process using the following formula (n1), the amount of low melting point water  $W_{fc}$  is found using formula (n2), and these are then subtracted from the total content of water, and thereby, the amount of unfreezable water  $W_{nf}$  is found... [Emphasis added].

Please note that the amount of unfreezable water is calculated based on the weight of water per weight of a dried sample, flux signal of the DSC and melting enthalpy at the melting point of bulk water (please refer to formulas in the Specification in the paragraph directly below paragraph [0019]).

The applicant argues that if the polymer is vacuum dried at 110 °C, the “state of existence” of the water within the electrolyte would not be found. This statement is not clear as water evaporates in the temperatures of 110 °C and therefore one of ordinary skills in the art would not expect to have water in any electrolyte in the above mentioned temperature.

The Examiner once more emphasizes that the polymer blends used in the prior art reference are comprised of the same polymer compounds disclosed by the applicant, and therefore the same properties will be obtained if DSC measurements of paragraph [0019] is applied to the prior art electrolyte and the same results from the formula used will be found.

In addition, please note that “When the structure taught by the reference is identical or substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent”; see MPEP 2112.01 Sections I and II. “For composition of matter claims, if the composition is physically the same, it must have the

Art Unit: 1726

same properties". Also, "Products of identical chemical composition cannot have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present". See MPEP 2112.01 Section II and also see *In re Spada*, 15 USPQ2d 1655, 1658 (Fed Cir 1990). In addition, the Court has held that "Simply put, the fact that a characteristic is a necessary feature or result of a prior-art embodiment (that is itself sufficiently described and enabled) is enough for inherent anticipation, even if that fact was unknown at the time of the prior invention." *Toro Co. v. Deere & Co.*, 69 USPQ2d 1584 1590 (Fed. Cir. 2004).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LADAN MOHADDES whose telephone number is (571)270-7742. The examiner can normally be reached on Monday to Thursday from 8:30 AM to 6:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1726

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